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THREE NEW SPECIES OF MALLOPHAGA FROM THE  
GREAT HORNED OWL

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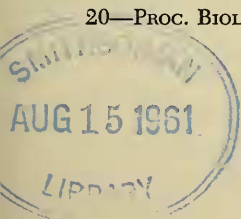
The Mallophaga collection of the U.S. National Museum contains several new species of Mallophaga found on North American owls. Described herewith are three new species found on the Great Horned Owl, *Bubo virginianus* (Gmelin). Heretofore only one species has been described from this host.

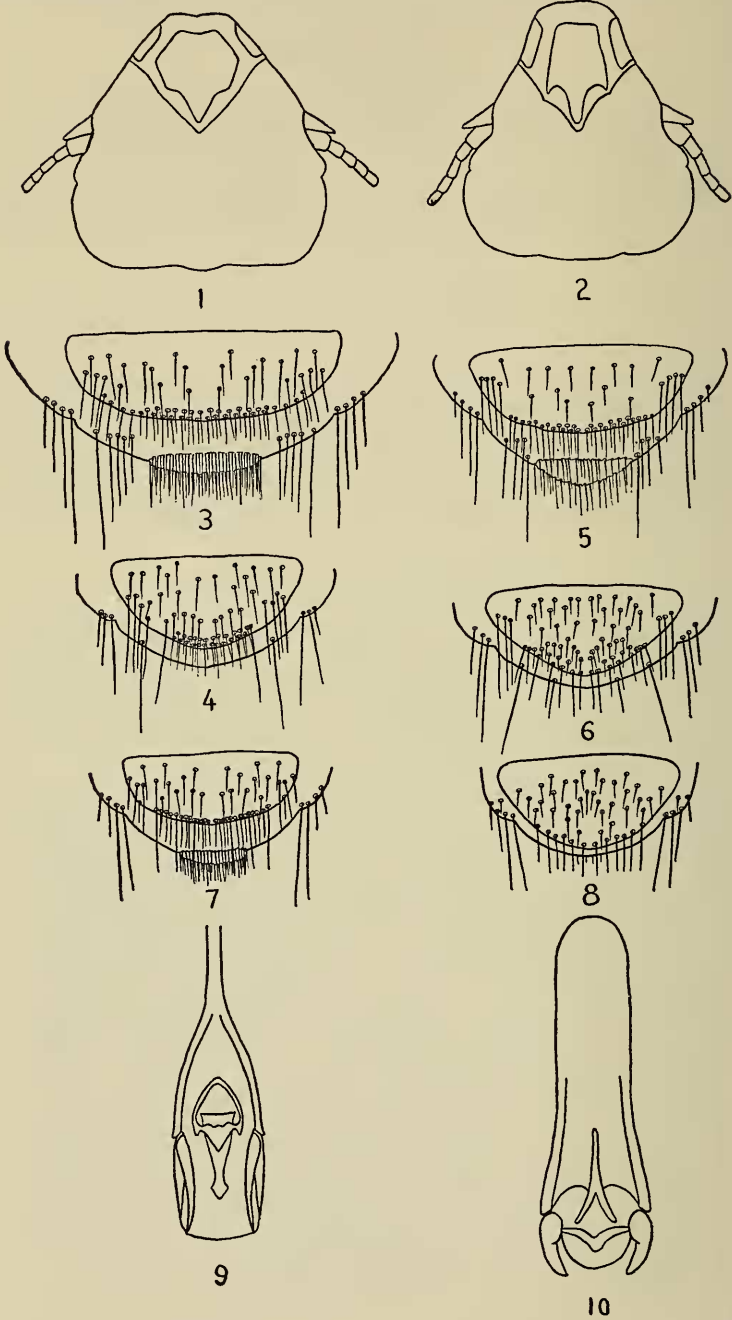
*Strigiphilus oculus* (Rudow, 1870)

The form with a short, wide, dorsal anterior plate of the forehead as shown in Fig. 1, has generally been accepted as *Strigiphilus oculus* (Rudow, 1870). The type has not been located, but the first line of Rudow's description "Kopf so lang wie hinten breit" and the specific name leave no doubt as to which form he described. *Strigiphilus bubonis* (Osborn, 1896) is conspecific with this form.

The only other interpretation of *S. oculus* was that advanced by Carriker in 1958. Carriker noted that at least two and probably three new species of *Strigiphilus* were found on this host. He designated as "neoparatype" of *S. oculus*, an undescribed female of an unknown species. He reasoned that Rudow described a narrow forehead form because it was placed in the old genus *Nirmus*. He apparently did not consider the name given by Rudow, or the two portions of Rudow's description: "Kopf so lang wie hinten breit" and "Das Thier sieht ganz einem *Docophorus* ähnlich." The present genus *Strigiphilus* was included in *Docophorus* for many years. Carriker's primary reason appears to be the desire to apply the name *S. oculus* in a manner so that *S. bubonis* would be valid for the broad forehead form.

I think it is unwise to consider any interpretation except the one which has been well established for 88 years, unless the types when located should indicate otherwise. Carriker's action is not accepted for the additional reasons that he did not describe and erect a neotype. Even if this had been done, a neotype has no standing unless accepted by the International Commission on Zoological Nomenclature. I feel that for





the reason given, the Commission would reject any attempt to change such a well-established interpretation.

**Strigiphilus acutifrons**, new species

*Holotype male*: Shape of head and dorsal anterior plate of forehead as shown in Fig. 2. Pterothorax with dorsal chaetotaxy of 2-3-3-2 long setae. Chaetotaxy of abdominal tergites: II-16, III-20, IV-20, V-20, VI-16, VII-16, and VIII-6. Chaetotaxy of abdominal sternites: II-6, III-14, IV-14, V-14, VI-14, VII-2, and VIII-4. Genital plate narrow and elongated with two long setae located centrally in the anterior portion. Genitalia as shown in Fig. 10.

*Allotype female*: Essentially same as the male except for size and terminal abdominal segments. Genital plate rectangular-shaped and with only sparsely scattered small setae. Terminal abdominal segment bilobed and ventrally with six long setae laterally on each lobe.

Measurements (in millimeters)

	HOLOTYPE MALE	ALLOTYPE FEMALE
Length of head	0.65	0.70
Width of head	0.57	0.62
Width of prothorax	0.34	0.38
Width of pterothorax	0.51	0.56
Width of abdomen	0.82	0.90
Total length	1.88	2.15

*Diagnosis*: The most obvious difference between this species and *S. oculatus* is the shape of the dorsal anterior plate of the forehead as illustrated. Abdominal chaetotaxy is more dense in *S. acutifrons* than in *S. oculatus*. The long narrow male genital plate in *S. acutifrons* is distinctive; in *S. oculatus* this structure is triangular-shaped with the widest portion being anterior. There appears to be no significant difference in

FIGS. 1-10. 1.—*Strigiphilus oculatus* (Rudow, 1870), outline of head, ♂. 2.—*Strigiphilus acutifrons* new species, outline of head, ♂. 3.—*Kurodaia edwardsi* new species, ventral view, terminal abdominal segments, ♀. 4.—*Kurodaia edwardsi* new species, ventral view, terminal abdominal segments, ♂. 5.—*Kurodaia magna* Emerson, 1960, ventral view, terminal abdominal segments, ♀. 6.—*Kurodaia magna* Emerson, 1960, ventral view, terminal abdominal segments, ♂. 7.—*Kurodaia keleri* new species, ventral view, terminal abdominal segments, ♀. 8.—*Kurodaia keleri* new species, ventral view, terminal abdominal segments, ♂. 9.—*Kurodaia keleri* new species, male genitalia. 10.—*Strigiphilus acutifrons* new species, male genitalia. (Figures 1-8 are drawn to the same scale.)

the female genital structures of the two species. The male genitalia are the same type, but smaller than in *S. cursor* (Burmeister, 1838).

*Type material:* Holotype male (USNM 65485), allotype female, and two paratypes collected in Quebec Province by Father Hubert in December 1956. Nine paratypes collected at Springdale, Oregon on 30 July 1933 by S. G. Jewett; four paratypes collected in 1914 by M. H. Spaulding at Boseman, Montana; two paratypes collected at Uvalde, Texas by D. C. Parman on 27 November 1915; eight paratypes collected at Tillamook, Oregon on 23 November 1930 by Alex Walker; and eight paratypes collected at Corvallis, Oregon on 16 November 1931 by M. F. Conova; all in the U. S. National Museum.

The British Museum (Natural History) has the following paratypes: seven collected in California (no other data); and twelve collected at Thue, Beaver Creek, Saskatchewan, Canada, during 14 October–2 November 1959 by R. Connell.

The University of Saskatchewan has the following paratypes: five collected on 14 October 1959, 19 collected on 2 November 1959, and six collected on 6 November 1959 by R. Connell at Thue, Beaver Creek, Saskatchewan, Canada.

#### ***Kurodaia edwardsi*, new species**

This species is closely related to *K. magna* Emerson, 1960 which was completely illustrated recently; so only significant differences are given. Some specimens of the type series have the expanded preantennal region as commented on in my paper on *K. magna*. There is no doubt that this expansion resulted from the mounting technique employed in all instances.

*Holotype male:* Chaetotaxy, except for terminal abdominal segments, with two long setae per tergite and sternite less than in *K. magna*. Ventral chaetotaxy of terminal abdominal segments as shown in Fig. 4, that of *K. magna* is shown in Fig. 6. The male genitalia do not appear to be distinctive.

*Allotype female:* Chaetotaxy, except for terminal abdominal segments, with two long setae per tergite and sternite less than in *K. magna*. Ventral chaetotaxy of terminal abdominal segments as shown in Fig. 3, that of *K. magna* is shown in Fig. 5.

#### Measurements (in millimeters)

	HOLOTYPE MALE	ALLOTYPE FEMALE
Length of head	0.40	0.44
Width of head	0.69	0.74
Width of prothorax	0.47	0.49
Width of metathorax	0.60	0.67
Width of abdomen	0.99	1.16
Total length	2.09	2.30

These measurements are greater, especially in widths, than for *K. magna*, as may be seen by comparing Figs. 3 and 4 with 5 and 6.

*Type material:* Holotype male (USNM 65483) and eleven paratypes collected at Nashville, Tennessee on 20 December 1940 by Mrs. A. R. Laskey. Allotype female collected at Church Creek, Maryland on 11 February 1932 by F. R. Smith. Three paratypes collected at Hamilton, New York in December 1946 by R. L. Edwards; two paratypes collected at Hamando, Mississippi on 18 September 1918 by O. G. Babcock; two paratypes collected at Raleigh, North Carolina on 4 February 1931 by C. S. Brimley; two paratypes collected at Jackson, Michigan on 1 June 1930 by W. G. Fargo; three paratypes collected at Brunswick, Maine on 27 October 1926 by A. O. Gross; five paratypes collected at Monton, New York in January 1930 by G. M. Smith; seven paratypes collected at Toronto, Canada on 28 October 1927 by J. L. Baillie; six paratypes collected in Quebec Province in December 1956 by Father Hubert; and 43 paratypes collected at Tillamook, Oregon on 23 November 1930 by Alex Walker; all in the U. S. National Museum.

In the British Museum (Natural History) are the following paratypes: two collected at Thue, Beaver Creek, Saskatchewan, Canada on 7 October 1959 by R. Connell; four collected at Beaver Creek, Saskatchewan, Canada, during December 1958–January 1959 by R. Connell; and two collected at Vancouver, British Columbia, Canada, on 13 February 1948 by G. J. Spencer.

The University of Saskatchewan has the following paratypes: six collected on 7 October 1959, 20 collected on 31 March 1959, and six collected during 23 December 1958–26 January 1959 by R. Connell at Thue, Beaver Creek, Saskatchewan.

This species is named for a coworker in Mallophaga, R. L. Edwards, who collected part of the type series.

#### ***Kurodaia keleri*, new species**

*Holotype male:* Temples angular as in *K. pectinata* (Osborn, 1902). Dorsally, prothorax with four medium-length setae and eight long setae on posterior margin. Metathorax with dorsal and ventral chaetotaxy as in *K. magna*. Chaetotaxy of abdominal tergites, except terminal, and paratergites same as in *K. magna*. Abdominal sternite I with six medium-length setae; II with 42 medium-length setae in three transverse rows. Each posterior-lateral angle of sternite III with three combs of setae; the two posterior combs with about 14 short setae each, and the anterior comb with five short setae. Chaetotaxy of sternites IV–VII same as in *K. magna*. Ventral chaetotaxy of terminal abdominal segments as shown in Fig. 8. Male genitalia, except for sac, as shown in Fig. 9. Genital sac serrated with stout, short and medium-length teeth.

*Allotype female:* Essentially same as the male, except for terminal abdominal segments and size. Ventral chaetotaxy of terminal abdominal segments as shown in Fig. 7.

## Measurements (in millimeters)

	HOLOTYPE MALE	ALLOTYPE FEMALE
Length of head	0.35	0.38
Width of head	0.55	0.60
Width of prothorax	0.35	0.38
Width of metathorax	0.47	0.54
Width of abdomen	0.62	0.75
Total length	1.71	1.85

*Diagnosis:* In general shape, this species has a relatively narrow head and abdomen as in *K. pectinata*. The chaetotaxy is more nearly that of *K. magna*. The chaetotaxy of the terminal abdominal segments as illustrated, is distinctive. The male genitalia, also illustrated, are of a type not heretofore encountered in the genus.

*Type material:* Holotype male (USNM 65484) and allotype female collected in Charlton County, Georgia by Francis Harper during 13-14 December 1935. Twelve paratypes collected at Ocala, Marion County, Florida on 15 August 1956 by C. H. Wharton; two paratypes collected on Oatland Island, Georgia on 12 September 1949; three paratypes collected at Menard, Texas on 2 October 1937 by H. E. Parish; and nine paratypes collected at Carleton, South Carolina on 15 December 1934 by H. S. Peters; all in the U. S. National Museum.

This species is named for Stefan von Keler, the noted German specialist on Mallophaga.

## LITERATURE CITED

- Carriker, M. A. 1958. On a small collection of Mallophaga from the United States, with descriptions of three new species. *Proc. Ent. Soc. Washington*, 60: 167-174.
- Emerson, K. C. 1960. A new species of Mallophaga from the Barred Owl. *Ent. News*, 71: 169-172.
- Rudow, F. 1870. Beobachtungen über die Lebesweise und den Bau der Mallophagen oder Pelzfresser, sowie Beschreibung neuer Arten. *Z. ges. NatWiss.*, 35: 449-487.